

Progress report July 3, 2013

Grant Number 7310003

Title: Biomass Reforestation for Boreal Forest

Grantee: Alaska Division of Forestry

Reporting period: August 31, 2012 to June 30, 2013

Deliverables submitted:

1. Written agreements for site use
2. Planting design
3. Photos
4. Progress report

Budget:

Expenditures

Personnel time for development of project design with collaborators, collection of cuttings, site selection, development of land use agreements, pretreatment of cuttings, travel time, and planting of cuttings.

Supplies were about 20 buckets for pre-treatment soaking of cuttings, plastic bags to store cuttings, wire flags for marking cuttings in field.

Travel was lodging at Kelly's Country Inn Delta Junction, meals per diem, and gas for vehicles.

Matching funding is primarily an RSA from Division of Forestry to University of Alaska Fairbanks for personnel services, use of farm facilities, and UAF vehicles. Additional matching funding is use of Division of Forestry vehicles, computers, mobile GIS/GPS, use of walk-in freezer, clippers.

Schedule Status: On schedule

Percent Completion:

Milestone	Task		Start Date	End Date	Grant Funds	Match Funds	Total Budget	Deliverables	Percent Completed
	1	Select field sites	Dec-13	Mar-13	\$ 4,000	\$ 4,000	\$ 8,000	Written agreements for site use	100%
	2	Finalize planting design	Jan-13	Mar-13	\$ 2,000	\$ 2,000	\$ 4,000	Planting designs	100%
MS 1: AEA accepts site agreements and final planting designs									
	3	Collect and store cuttings	Mar-13	Mar-13	\$ 8,000	\$ 8,000	\$ 16,000		100%
	4	Plant cuttings	Jun-13	Sep-13	\$ 16,000	\$ 16,000	\$ 32,000		100%
	5	Evaluate plantations Year 1	Nov-13	Sep-14	\$ 3,000	\$ 3,000	\$ 6,000	Year 1 summary report	
MS 2: AEA accepts Year 1 summary report									
	6	Evaluate plantations Year 2	Nov-14	Sep-15	\$ 3,000	\$ 3,000	\$ 6,000		
	7	Prepare draft project report and presentation	Oct-15	Nov-15	\$ 5,000	\$ 5,000	\$ 10,000	Draft report	
	8	Prepare final report	Dec-15	Dec-15	\$ 4,000	\$ 4,000	\$ 8,000	Final project report	
MS 3: AEA accepts final report									

Work Progress:

Task 1 Select field sites

Division of Forestry area office staff assisted in identification of planting sites. Maps were prepared and agreements signed. Due to a record late spring, final plot selection was delayed. Roads were snow covered and then impassable due to mud much later than anticipated. Flooding along the Tanana River east of Delta Junction limited site availability. Delta sites 1 and 3 were inaccessible. Alternate sites on Cummings Road and on Pogo Mine Road were substituted to achieve 5 Delta sites. Mat-Su sites were selected as planned, however late break-up caused delayed site assessment and resulted vehicles getting stuck in mud.

Coordinates of field sites are as follows:

lat	lon
64.3314033	-145.6835133
64.3344300	-145.7923350
64.3083717	-145.9979717
63.8865583	-144.8975400
63.8540367	-144.8827167
61.6595916	-149.6122499
61.7984366	-149.8681348
61.8310283	-149.8595848
61.8431933	-149.8253431
61.6675366	-149.8055066

Stooling beds sites were selected as planned on UAF farms in Palmer and Delta. UAF farm managers assisted in selection and mechanical site preparing.

Task 2: Finalize Planting Design

Stooling beds are in rows with cuttings approximately every 3' and rows spaced 3' apart. Stooling beds were planted with both local poplar cuttings and hybrid poplar cuttings obtained from Canada. Hybrid poplars were added to the design to evaluate if Canadian hybrids will survive in Alaska.

As planned, 5 field sites are used in Ma-Su and 5 field sites in Delta area. Reforestation field sites planting pattern had to be irregular due to highly irregular and jumbled nature of logging sites. Field sites have about 400 cuttings per site. The planting design is intended to be analyzed by ANOVA where each site is a replication unit and provides percent survival. For this exploratory evaluation, survival is primary concern and only meaningful response for the two duration of project.

Task 3: Collect and store cuttings

Collection of poplar cuttings has been completed. An estimated 4,000 cuttings were collected in the Mat-Su valley, and an estimated 4,000 were collected in Delta Junction area. Whips were collected from 2012 season growth then cut to 8 to 10 inch (20-25 cm) cuttings. Cuttings were placed in heavy plastic bags and put in frozen storage at the Plant Material Center near Palmer. More cuttings were collected that expect to be plating, thereby giving opportunity for selecting best cuttings for planting. Photos and video clips were taken of collection.

Task 4: Plant Cuttings

Cuttings were planted as planned. Due to late spring with impassable road conditions and frozen soil, planting was delayed from planned. Planting was done by team of UAF and DOF: Jeff Graham, Val Barber, Susan McNeil, Steve Nickel, Jim Smith, and Glen Holt. Team varied by location and availability.

Unexpected problems:

Late spring delayed site assessment and planting. Muddy road conditions caused vehicles to get stuck. Flooding on Tanana River made several sites inaccessible. Lack of irrigation for stooling bed at Delta Farm may cause high mortality. ACEP delivered soil temperature data loggers after first Mat-Su planted was installed. Hence, soil temperature data logger was installed about 10 days after planting. Delta temperature loggers were installed at planting.

Supporting documents: Photos attached

Future work:

Evaluate cuttings for survival at end of first growing season.

Evaluate cuttings for survival and growth at end of second growing season.

Prepare report and presentations of results.

No problems expected at present.



Temperature Logger in Delta



Planting in Mat-Su



Planting Team Mat-Su



Stool Bed – Delta



Pre-plant soak treatment



Pre-plant soak treatment



Early growth



Planting in Delta